

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Yuan, Baosheng et al

Application No.: 10/019,883

Filed: March 19, 2007

For: Method and System for Generating and  
Searching an Optimal Maximum Likelihood  
Decision Tree for HMM Based Speech  
Recognition

Examiner: SALAZAR, Luis A

Art Unit: 4192

**STATEMENT OF COMMON OWNERSHIP UNDER 35 U.S.C. § 103(c)**

In accordance with the provisions set forth under 35 U.S.C. § 103(c), Applicants make the following statement:

*U.S. Patent 6,789,063 issued to Yan was owned by Intel Corporation at the time the invention for the above referenced patent application was made.*

In support of this statement, Applicants respectfully submit concurrently herewith the following Exhibits:

- **Exhibit 1** is a copy of an assignment regarding the above referenced U.S. Patent Application, serial number 10/019,883, identifying the above referenced patent application by title “Method and System for Generating and Searching an Optimal Maximum Likelihood Decision Tree for Hidden Markov Model (HMM) Based Speech Recognition” and by an Attorney’s Docket number 42390P9270. The

assignment is executed by four out of five named inventors and assignors, Yuan, Zhao, Guo, and Yan, between April 6, 2006 and March 14, 2007, assigning their interests to Intel Corporation.

- **Exhibit 2** is a copy of a “Notice of Recordation of Assignment Document” from the USPTO regarding the above referenced U.S. Patent Application, serial number 10/019,883, identifying the above referenced patent application by title “Method and System for Generating and Searching an Optimal Maximum Likelihood Decision Tree for Hidden Markov Model (HMM) Based Speech Recognition” and by an Attorney’s Docket number 42390P9270. The notice shows a recordation date of March 15, 2007, at reel and frame number 019027/0688, for four out of five named inventors and assignors, Yuan, Zhao, Guo, and Yan.
- **Exhibit 3** is a copy of an assignment regarding the above referenced U.S. Patent Application, serial number 10/019,883, identifying the above referenced patent application by title “Method and System for Generating and Searching an Optimal Maximum Likelihood Decision Tree for Hidden Markov Model (HMM) Based Speech Recognition” and by an Attorney’s Docket number 42390P9270. The assignment is executed by the fifth and last named inventor and assignor, Lin on November 2, 2006, assigning his interest to Intel Corporation.
- **Exhibit 4** is a copy of a “Notice of Recordation of Assignment Document” from the USPTO regarding the above referenced U.S. Patent Application, serial number 10/019,883, identifying the above referenced patent application by title “Method and System for Generating and Searching an Optimal Maximum Likelihood Decision Tree for Hidden Markov Model (HMM) Based Speech Recognition” and by an

Attorney's Docket number 42390P9270. The notice shows a recordation date of December 26, 2006, at reel and frame number 018734/0194, for the fifth named inventor and assignor, Lin.

- **Exhibit 5** is a copy of an assignment regarding patent 6,789,063 (serial number 09/653,402), identified by the title "Acoustic Modeling using a Two-level Decision Tree in a Speech Recognition System" and by Attorney's Docket number 42390P7530, from assignor and inventor Yan to assignee Intel Corporation, executed by Yan on November 9, 2000.
- **Exhibit 6** is a copy of a "Notice of Recordation of Assignment Document" from the USPTO regarding patent 6,789,063 (serial number 09/653,402) showing the assignment was recorded on November 21, 2000, at reel and frame number 011298/0655.
- **Exhibit 7** is a copy of a "Notice of Acceptance of Application under 35 U.S.C 371 and 37 CFR 1.495" from the USPTO regarding the above referenced U.S. Patent Application, serial number 10/019,883, identifying the above referenced patent application by title "Method and System for Generating and Searching an Optimal Maximum Likelihood Decision Tree for Hidden Markov Model (HMM) Based Speech Recognition" and by an Attorney's Docket number 42390P9270. The filing date of the above referenced U.S. Patent Application is the international filing date of the international application (Article 11(3) and 35 U.S.C 363), which is on September 30, 2000.

Thus, at the time the invention for the above referenced Patent Application 10/019,883 was made, having been filed on March 19, 2007, Intel Corporation, in accordance with 35

U.S.C. § 103(c), commonly owned U.S. Patent 6,789,063 issued to Yan (serial number 09/653,402).

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: May 30, 2008

/Gregory D Caldwell/

Gregory D Caldwell

Reg. No. 39,926

1279 Oakmead Parkway  
Sunnyvale, CA 94085-4040  
(503) 439-8778

# EXHIBIT 1

## **ASSIGNMENT**

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned:

**Baosheng Yuan; Qingwei Zhao; Qing Guo; Yonghong Yan; Zhiwei Lin**

hereby sell, assign, and transfer to:

**Intel Corporation**

a Corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California 95052 United States ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all foreign countries, in and to any and all inventions and improvements that are disclosed in the application for the United States patent filed on December 27, 2001, and assigned Application No. 10/019,883 and is entitled:

### **METHOD AND SYSTEM FOR GENERATING AND SEARCHING AN OPTIMAL MAXIMUM LIKELIHOOD DECISION TREE FOR HIDDEN MARKOV MODEL (HMM) BASED SPEECH RECOGNITION**

and in and to said application and all provisional, design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all foreign countries on said inventions and improvements; and in and to all rights of priority from the filing of said United States applications;

agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all provisional, design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all said inventions and improvements; execute all rightful oaths, assignments, power of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Each Inventor: Please Sign and Date Below:

26 Aug 2006   
Date Name: Baosheng Yuan

Date Name: Qingwei Zhao

Date Name: Qing Guo

Date Name: Yonghong Yan

Date Name: Zhiwei Lin

Date Name:

Date Name:

Date Name:

Date Name:

Date Name:

Date Name:

Date Name:

Assignment Document Return Address:  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 Wilshire Boulevard, 7th Floor  
Los Angeles, CA 90025  
Telephone: (503) 439-8778

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and in and to said application and all provisional, design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all foreign countries on said inventions and improvements; and in and to all rights of priority from the filing of said United States applications;

agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all provisional, design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all said inventions and improvements; execute all rightful oaths, assignments, power of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

**Each Inventor: Please Sign and Date Below:**

Name: Qingwei Zhao

Name: **Qing Guo**

Name: **Yonghong Yan**

Name: **Zhiwei Lin**

**Name:**

Name:

Name:

Name: \_\_\_\_\_

Name:

**Name:**

Name: \_\_\_\_\_

• Z. N.

## **ASSIGNMENT**

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**Baosheng Yuan; Qingwei Zhao; Qing Guo; Yonghong Yan; Zhiwei Lin**

hereby sell, assign, and transfer to

### **Intel Corporation**

a Corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California 95052 United States ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all foreign countries, in and to any and all inventions or improvements that are disclosed in the application (provisional or non-provisional) for the United States patent which may have a declaration executed by the undersigned prior hereto or concurrently herewith and is entitled

METHOD AND SYSTEM FOR GENERATING AND SEARCHING AN OPTIMAL MAXIMUM LIKELIHOOD DECISION TREE FOR HIDDEN MARKOV MODEL (HMM) BASED SPEECH RECOGNITION

said patent application also identified as follows (when known):

[I/we hereby authorize an attorney or agent for said Assignee to insert below the application number and filing date of said patent application when known.]

United States Patent Application Number 10/019,883 filed December 27, 2001,

and in and to said application (provisional or non-provisional) and all provisional applications, non-provisional applications, utility applications, design applications, divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions or improvements; and in and to all original patents, reissued patents, reexamination certificates, and extensions, that have been or shall be issued in the United States and all foreign countries on said inventions or improvements; and in and to all rights of priority resulting from the filing of said United States application;

agree that said Assignee may apply for and receive a patent or patents for said inventions or improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all provisional applications, non-provisional applications, utility applications, design applications, divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions, and all other patent applications on any and all said inventions or improvements; execute all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and representatives all facts known to the undersigned relating to said inventions or improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or representatives in securing and maintaining proper patent protection for said inventions or improvements and for vesting title to said inventions or improvements, and all applications for patents and all patents on said inventions or improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

**Each Inventor: Please Sign and Date Below:**

---

Date \_\_\_\_\_ Name: **Baosheng Yuan**

Date \_\_\_\_\_ Name: **Qingwei Zhao**

2007-03-14 Qing Guo  
Date \_\_\_\_\_ Name: **Qing Guo**

Date \_\_\_\_\_ Name: **Yonghong Yan**

Date \_\_\_\_\_ Name: **Zhiwei Lin**

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

**Assignment Document Return Address:**  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 Wilshire Boulevard, 7th Floor  
Los Angeles, CA 90025  
Telephone: (503) 439-8778

Attorney's Docket No.: 42390P9270

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**Baosheng Yuan; Qingwei Zhao; Qing Guo; Yonghong Yan; Zhiwei Lin**

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### **METHOD AND SYSTEM FOR GENERATING AND SEARCHING AN OPTIMAL MAXIMUM LIKELIHOOD DECISION TREE FOR HIDDEN MARKOV MODEL (HMM) BASED SPEECH RECOGNITION**

and in and to said application and all provisional, design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all foreign countries on said inventions and improvements; and in and to all rights of priority from the filing of said United States applications;

agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all provisional, design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all said inventions and improvements; execute all rightful oaths, assignments, power of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

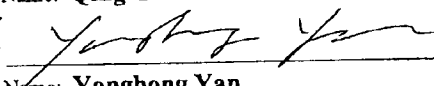
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Each Inventor: Please Sign and Date Below:

Date \_\_\_\_\_ Name: **Baosheng Yuan**

Date \_\_\_\_\_ Name: **Qingwei Zhao**

Date \_\_\_\_\_ Name: **Qing Guo**

4-26-2006   
Date \_\_\_\_\_ Name: **Yonghong Yan**

Date \_\_\_\_\_ Name: **Zhiwei Lin**

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Date \_\_\_\_\_ Name: \_\_\_\_\_

Assignment Document Return Address:  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 Wilshire Boulevard, 7th Floor  
Los Angeles, CA 90025  
Telephone: (503) 439-8778

# EXHIBIT 2



**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

MARCH 19, 2007

PTAS  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 WILSHIRE BOULEVARD  
7TH FLOOR  
LOS ANGELES, CA 90025

**\*700315849A\***

\*700315849A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 03/15/2007

REEL/FRAME: 019027/0688  
NUMBER OF PAGES: 9

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).  
DOCKET NUMBER: 42390P9270

ASSIGNOR:  
YUAN, BAOSHENG

DOC DATE: 08/26/2006

ASSIGNOR:  
ZHAO, QINGWEI

DOC DATE: 05/17/2006

ASSIGNOR:  
GUO, QING

DOC DATE: 03/14/2007

ASSIGNOR:  
YAN, YONGHONG

DOC DATE: 04/26/2006

ASSIGNEE:  
INTEL CORPORATION  
2200 MISSION COLLEGE BOULEVARD

USPTO 3/20/2007 12 58 17 PM PAGE 3/004 Fax Server  
O BLAKELY SOKOLOFF, TAYLOR & ZAFMAN LLP COMPANY 12400 WILSHIRE BOULEVARD  
LANIZ CLARA, CALIFORNIA 95052

0.90776080 PAGE 2

SERIAL NUMBER 10019883 FILING DATE  
PATENT NUMBER ISSUE DATE  
TITLE METHOD AND SYSTEM FOR GENERATING AND SEARCHING AN OPTIMAL MAXIMUM  
LIKELIHOOD DECISION TREE FOR HIDDEN MARKOV MODEL (HMM) BASED SPEECH  
RECOGNITION

VIOLET MCCOY, EXAMINER  
ASSIGNMENT SERVICES BRANCH  
PUBLIC RECORDS DIVISION

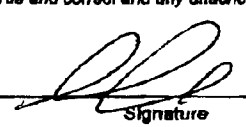
03/15/07 15 31 FAX 5034396073

BSTZ BEAVERTON  
03/15/2007  
700315849

+ PTO ASSIGNMENT 002

Based on FORM PTO-1595 (Rev. 08/05)  
as modified by Blakely Sokoloff Taylor & Zafman (wtr) 11/30/2005

U S DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Recordation Form Cover Sheet PATENTS ONLY	
To the Director of the U.S. Patent and Trademark Office Please record the attached documents or the new address(es) below	
1 Name of conveying party(ies) Baosheng Yuan, Qingwei Zhao, Qing Guo, Yonghong Yan	2 Name and address of receiving party(ies) Name <u>Intel Corporation</u>
Additional name(s) of conveying party(ies) attached? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	Internal Address _____ Street Address <u>2200 Mission College Boulevard</u>
3 Nature of Conveyance <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Other _____	City <u>Santa Clara</u> State <u>CA</u> Zip <u>95052</u> Country <u>United States</u>
Execution Date <u>08-26-06, 05-17-06, 03-14-07, 04-26-06</u>	Additional name(s) & address(es) attached? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
4 Application number(s) or patent number(s) <input type="checkbox"/> This document is being filed together with a new application	
A Patent Application No (s)  <u>10/019,883</u>	B Patent No (s)  
Additional numbers attached? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
5 Name and address of party to whom correspondence concerning document should be mailed Name <u>Blakely, Sokoloff, Taylor &amp; Zafman LLP</u> Internal Address _____ Street Address <u>12400 Wilshire Boulevard</u> <u>7th Floor</u> City <u>Los Angeles</u> State <u>CA</u> ZIP <u>90025</u> Phone Number <u>(503) 439-8778</u> Fax Number <u>(503) 439-6073</u> E-mail Address <u>greg.d.caldwell@bstz.com</u>	6 Total number of applications and patents involved <u>1</u> 7 Total Fee (37 CFR 3.41) \$ <u>40.00</u> <input type="checkbox"/> Enclosed <input checked="" type="checkbox"/> Authorized to be charged to deposit account 8 Deposit Account Number <u>02-2666</u> (Attach duplicate copy of this page if paying by deposit account)
DO NOT USE THIS SPACE	
9 Statement and signature To the best of my knowledge and belief the foregoing is true and correct and any attached copy is a true copy of the original document.  <u>Gregory D. Caldwell</u>  <u>March 15, 2007</u> Name of Person Signing Signature Date Total number of pages including cover sheet, attachments, and document: <u>9</u>	

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140 or mailed to  
Mail Stop Assignment Recordation Services  
Director of the U.S. Patent and Trademark Office  
P O Box 1450  
Alexandria, VA 22313-1450

Docket No 42390P9270

CH \$40.00 022666-10019183

# EXHIBIT 3

## **ASSIGNMENT**

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned:

**Baosheng Yuan; Qingwei Zhao; Qing Guo; Yonghong Yan; Zhiwei Lin**

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covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant mortgage license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned and that full right to convey the same as herein expressed is possessed by the undersigned

Each Inventor Please Sign and Date Below

Date	Name <b>Baosheng Yuan</b>
Date	Name <b>Qingwei Zhao</b>
Date	Name <b>Qing Guo</b>
Date	Name <b>Yonghong Yan</b>
<i>Nov 2, 2006</i>	<i>Lin Zhiwei</i>
Date	Name <b>Zhiwei Lin</b>
Date	Name
Date	Name
Date	Name
Date	Name
Date	Name
Date	Name
Date	Name

Assignment Document Return Address  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 Wilshire Boulevard, 7th Floor  
Los Angeles, CA 90025  
Telephone (503) 439-8778

# EXHIBIT 4

003

GDC/OR



244 P9270

RECEIVED

JAN 16 2007

## UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICEBLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
LOS ANGELES

JANUARY 09, 2007

PTAS

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 WILSHIRE BOULEVARD  
7TH FLOOR  
LOS ANGELES, CA 90025

\*103356085A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENTTHE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF  
THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS  
AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER  
REFERENCED BELOW.PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE  
INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA  
PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD  
FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY  
CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350.  
PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE,  
MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 12/26/2006

REEL/FRAME: 018734/0194  
NUMBER OF PAGES: 3BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).  
DOCKET NUMBER: 42390P9270ASSIGNOR:  
LIN, ZHIWEI

DOC DATE: 11/02/2006

ASSIGNEE:  
INTEL CORPORATION  
2200 MISSION COLLEGE BOULEVARD  
SANTA CLARA, CALIFORNIA 95052

SERIAL NUMBER: 10019883

FILING DATE:

PATENT NUMBER:

ISSUE DATE:

TITLE: METHOD AND SYSTEM FOR GENERATING AND SEARCHING AN OPTIMAL MAXIMUM  
LIKELIHOOD DECISION TREE FOR HIDDEN MARKOV MODEL (HMM) BASED SPEECH  
RECOGNITION

ENTERED

1/18/07

Entered into FIP  
By: jic

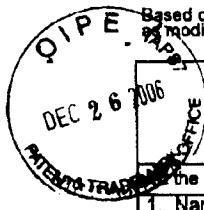
JAN 16 2007

STATUS: 001

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018734/0194 PAGE 2

ASSIGNMENT SERVICES BRANCH  
PUBLIC RECORDS DIVISION



Based on FORM PTO-1595 (Rev. 08/05)  
as modified by Blakely, Sokoloff, Taylor & Z

01-03-2007

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office



103356085

The Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.	
1. Name of conveying party(ies): Zhiwei Lin	2. Name and address of receiving party(ies): Name: <u>Intel Corporation</u> Internal Address: _____ Street Address: <u>2200 Mission College Boulevard</u> City: <u>Santa Clara</u> State: <u>CA</u> Zip: <u>95052</u> Country: <u>United States</u>
Additional name(s) of conveying party(ies) attached? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	Additional name(s) & address(es) attached? <input type="checkbox"/> No <input type="checkbox"/> Yes
3. Nature of Conveyance: <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Other	Execution Date: <u>11/2/06</u> Document ID# <u>103313453</u>
4. Application number(s) or patent number(s): <input type="checkbox"/> This document is being filed together with a new application. A. Patent Application No.(s) <u>10/019,883</u> B. Patent No.(s) Additional numbers attached? <input type="checkbox"/> No <input type="checkbox"/> Yes	
5. Name and address of party to whom correspondence concerning document should be mailed: Name: <u>Blakely, Sokoloff, Taylor &amp; Zafman LLP</u> Internal Address: _____ Street Address: <u>12400 Wilshire Boulevard</u> <u>7th Floor</u> City: <u>Los Angeles</u> State: <u>CA</u> ZIP: <u>90025</u> Phone Number: <u>(503) 439-8778</u> Fax Number: <u>(503) 439-6073</u> E-mail Address: <u>greg.d.caldwell@bstz.com</u>	6. Total number of applications and patents involved: <u>1</u> 7. Total Fee (37 CFR 3.41).....\$ <u>40.00</u> <input checked="" type="checkbox"/> Enclosed <input type="checkbox"/> Authorized to be charged to deposit account 8. Deposit Account Number: <u>02-2666</u> (Attach duplicate copy of this page if paying by deposit account)
DO NOT USE THIS SPACE	
9. Statement and signature. <i>To the best of my knowledge and belief, the foregoing is true and correct and any attached copy is a true copy of the original document.</i>  <u>Gregory D. Caldwell</u> _____ <u>December 19, 2006</u> Name of Person Signing Signature Date Total number of pages including cover sheet, attachments, and document: <u>3</u>	

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:  
Mail Stop Assignment Recordation Services  
Director of the US Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

Docket No. 42390P9270

12/23/2006 10:00:00  
01 FC:0021

# EXHIBIT 5

**ASSIGNMENT**  
(For Execution After Filing Patent Application)

In consideration of good and valuable consideration the receipt of which is hereby acknowledged, I, the undersigned

**Yonghong Yan**

hereby sell, assign, and transfer to

**Intel Corporation**

a corporation of Delaware having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95052-8119 ("Assignee") and its successors assigns, and legal representatives the entire right, title, and interest for the United States and all foreign countries, in and to any and all inventions and improvements that are disclosed in the application for the United States patent that was filed September 01, 2000, and assigned Application No. 09/653,402 and is entitled

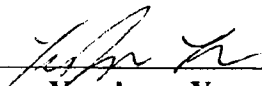
**ACOUSTIC MODELING USING A TWO-LEVEL DECISION TREE IN A SPEECH  
RECOGNITION SYSTEM**

and in and to said application and all divisional, continuing, continuation in part substitute renewal, reissue and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions and improvements and in and to all original and reissued patents that have been or shall be issued in the United States and all foreign countries on said inventions and improvements and in and to all rights of priority resulting from the filing of said United States application

agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name and that when requested without charge to but at the expense of said Assignee its successors assigns and legal representatives to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all divisional continuing, continuation in part substitute renewal, reissue and all other patent applications on any and all said inventions and improvements execute all rightful oaths assignments powers of attorney and other papers communicate to said Assignee its successors assigns and representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof, and generally assist said Assignee its successors, assigns, or representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements and all applications for patents and all patents on said improvements in said Assignee its successors assigns and legal representatives and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

**Each Inventor: Please Sign and Date Below:**

Nov 9, 2000   
Date Name: **Yonghong Yan**

\_\_\_\_\_  
Date Name:

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Date Name:

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Date Name:

Assignment Document Return Address:  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 Wilshire Blvd., Seventh Floor  
Los Angeles, CA 90025-1026  
Telephone: (503) 684-6200

# EXHIBIT 6



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

FEBRUARY 08, 2001

PTAS  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
DONNA JO CONINGSBY  
12400 WILSHIRE BOULEVARD  
7TH FLOOR  
LOS ANGELES, CA 90025

RECEIVED

JAN 12 2001



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P7530

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 11/21/2000

REEL/FRAME: 011298/0655  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:  
YAN, YONGHONG

DOC DATE: 11/09/2000

ASSIGNEE:  
INTEL CORPORATION  
2200 MISSION COLLEGE BOULEVARD  
SANTA CLARA, CALIFORNIA 95052-8119

SERIAL NUMBER: 09653402  
PATENT NUMBER:

FILING DATE: 09/01/2000  
ISSUE DATE:

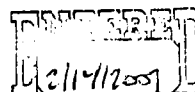
DIANE RUSSELE, PARALEGAL  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

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FEB 15 2001

U.S. PATENT AND TRADEMARK OFFICE

J2



cc: AKA 2/20/01

12-07-2000

FORM PTO-1595

(Rev. 6-93)

OMD No. 0651 0011 (exp. 4/94)

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office

101543035

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof

1 Name of conveying party(ies)

Yonghong Yan

2 Name and address of receiving party(ies)

Name Intel Corporation

Internal Address \_\_\_\_\_

Additional name(s) of conveying party(ies) attached?

☒ No ☐ Yes

3 Nature of Conveyance

☒ Assignment ☐ Change of Name☐ Security Agreement☐ Other \_\_\_\_\_☐ MergerStreet Address 2200 Mission College BoulevardCity Santa Clara State CA ZIP 95052-8119Execution Date 11/09/00Additional name(s) & address(es) attached? ☒ No ☐ Yes

4 Application number(s) or patent number(s)

If this document is being filed together with a new application, the execution date of the application is \_\_\_\_\_

A Patent Application No (s)

09/653,402

B Patent No (s) \_\_\_\_\_

Additional numbers attached? \_\_\_\_\_

5 Name and address of party to whom correspondence concerning document should be mailed

Name Blakely, Sokoloff, Taylor & Zafman LLP

Internal Address \_\_\_\_\_

Street Address 12400 Wilshire Boulevard  
7th FloorCity Los Angeles State CA ZIP 900256 Total number of applications and patents involved 17 Total Fee (37 CFR 3.41) \$ 40.00☒ Enclosed☐ Authorized to be charged to deposit account

8 Deposit Account Number

02-2666

(Attach duplicate copy of this page if paying by deposit account)

12/06/2000 DBYRNE 00000196 09653402

01 FC 581

40 00 00

DO NOT USE THIS SPACE

9 Statement and signature

To the best of my knowledge and belief, the foregoing is true and correct and any attached copy is a true copy of the original document

Donna Jo Coningsby, Reg. No. 41,684

Name of Person Signing

Signature

November 17, 2000

Date

Total number of pages including cover sheet, attachments, and document

3Mail documents to be recorded with required cover sheet information to  
Assistant Commissioner of Patents, Box Assignments  
Washington, D.C. 20231Attorney Docket No. 042390 P7530

# EXHIBIT 7

NTL ACCEP APP

Page 1 of 2

GDC



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
10/019,883	Baosheng Yuan	42390.P9270

INTERNATIONAL APPLICATION NO.

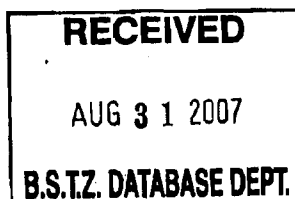
PCT/CN00/00296

I.A. FILING DATE

PRIORITY DATE

09/30/2000

45209  
INTEL/BLAKELY  
1279 OAKMEAD PARKWAY  
SUNNYVALE, CA 94085-4040



CONFIRMATION NO. 8062

371 ACCEPTANCE LETTER



\*OC000000025536548\*

Date Mailed: 08/24/2007

**NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495**

The applicant is hereby advised that the United States Patent and Trademark Office in its capacity as a Designated / Elected Office (37 CFR 1.495), has determined that the above identified international application has met the requirements of 35 U.S.C. 371, and is ACCEPTED for national patentability examination in the United States Patent and Trademark Office.

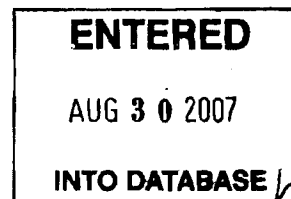
The United States Application Number assigned to the application is shown above and the relevant dates are:

<u>03/19/2007</u>	<u>03/19/2007</u>
DATE OF RECEIPT OF 35 U.S.C. 371(c)(1), (c)(2) and (c)(4) REQUIREMENTS	DATE OF COMPLETION OF ALL 35 U.S.C. 371 REQUIREMENTS

A Filing Receipt (PTO-103X) will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE " FILING DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1), (c)(2) and (c)(4) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN ABOVE.** The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363). Once the Filing Receipt has been received, send all correspondence to the Group Art Unit designated thereon.

The following items have been received:

- Copy of the International Application filed on 12/27/2001
- Copy of the International Search Report filed on 12/27/2001
- Oath or Declaration filed on 03/19/2007
- U S. Basic National Fees filed on 12/27/2001



Entered into FIP  
By:

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

---

CHARITTA A BURT

Telephone: (703) 308-9140 EXT 207

PART 1 - ATTORNEY/APPLICANT COPY

FORM PCT/DO/EO/903 (371 Acceptance Notice)